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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,308	11/27/2001	Takeshi Ishizaki	CA1469	2556
23493 7590 08/06/2007 SUGHRUE MION, PLLC 401 Castro Street, Ste 220 Mountain View, CA 94041-2007			EXAMINER NGUYEN, THANH T	
			ART UNIT 2144	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/996,308

Applicant(s)

ISHIZAKI, TAKESHI

Examiner

Tammy T. Nguyen

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |



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Detailed Office Action

1. This action is responsive to the amendment filed on May 22, 2007.
2. Claims 1-22 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raab et al., (hereinafter Raab) U.S. Patent No. 5,751,967 in view of Kurt G. Schumacher., (hereinafter Schumacher) U.S. Patent No. 6,735,765 further in view of Pothapragada., (hereinafter Pothapragada) U.S. Patent No. 6,389,432.

5. As to claim 1, Raab discloses the invention substantially as claimed. Raab teaches a storage apparatus, comprising: a processor (Fig.2, 202); a memory (Fig.2, 204, main memory); at least one storage device operable to provide storage resources for storing (fig.2, 207, storage device) user data over a network at least one network entity (Fig.2, 207) (see col.6, lines 26-58); a network interface connectable to a virtual local area network (VLAN) switch (fig.4) (see col.1, lines 15-45, and col.5, lines 60-67); wherein the processor is at least intermittently coupled to the memory, the storage controller and the network interface (fig.2); wherein the memory comprises configuration information including information on at least one group, information on mapping of a plurality of segments (VLANS) of a virtual local area network (VLAN) [see col.8, lines 12-18](*configuring VLANs within configuration-switched devices*) connectable by the network interface to the at least one group and information on mapping of the plurality of a plurality of storage devices to the at least one group [see col. 6, lines 6-10] (groups into VLANS (segments)); and wherein the processor, the memory, the storage controller and the network interface are operable to control the virtual local area network (VLAN) switch to map the plurality of segments to the at least one group and the at least one group, and based upon the configuration information; and such that a specific network entity associated with a specific segment of the virtual local area network VLAN associated with at least one of the plurality of segments to access the within the at least one group. (see col.5, line 20 to col.6, line 48, col.8, lines 53-67, col.15, line 58 to col.17, line 10). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage

device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

6. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
7. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information form one location in memory and placing the extracted information thereby enable data sharing. Also, Raab and Schumacher do not explicitly disclose a specific network entity is allowed to access only a specific virtual volume.

8. In the same field of endeavor, Pothapragada discloses (e.g., intelligent virtual volume access). Pothapragada discloses a specific network entity is allowed to access only a specific virtual volume (see fig.1 of Pothapragada and col. 6, line 64 to col.7, line 55, and col.8, lines 35-51) (*In response to a request for local storage space, the create function check whether a local volume can satisfy the request*).
9. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Pothapragada's teaching of an intelligent virtual volume access with the teaching of Raab, to have a specific network entity is allowed to access only a specific virtual volume for the purpose of increasing storage performance and/or capacity to meet new demands (see Pothapragara col.1, lines 55-57).
10. As to claim 2, Raab teaches the invention as claimed, further comprising an out of band management interface connectable to a second network (Fig.4).
11. As to claim 3, Raab teaches the invention as claimed, wherein the network interface connectable to a virtual local area network (VLAN) switch comprises an interface to a VLAN trunk line (see col.16, line 65 to col.17, line 10).
12. As to claim 4, Raab teaches the invention as claimed, wherein information carried by the VLAN trunk line is identified using an embedded tag (see col.17, lines 1-17).

13. As to claim 5, Raab teaches the invention as claimed, wherein the network interface connectable to a virtual local area network (VLAN) switch comprises an interface to a VLAN switch, the VLAN switch connectible to at least one host computer via at least one VLAN access link (Fig.4, plurality access links).
14. As to claim 6, Raab teaches the invention as claimed, wherein information carried by the at least one VLAN access links comprises untagged frames (see col.5, lines 1-19, and col.6, line 59 to col.7, line 20).
15. As to claim 7, Raab teaches the invention as claimed, wherein information carried by the at least one VLAN access link is identified using a VLAN Identifier of a receiving port (see col.6, lines 1-25, and col.12, lines 15-32).
16. As to claim 8, Raab teaches the invention as claimed, wherein information carried by the at least one VLAN access link is identified using a Media Access Control (MAC) address (see col.2, lines 55-65, and col.6, lines 10-27).
17. As to claim 9, Raab teaches the invention as claimed, wherein an untagged frame comprises: a preamble field; a source MAC field; a destination MAC field; a type field; a data field; and a CRC field (see col.2, lines 55-65, and col.6, lines 10-27).

18. Claims 10-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raab et al., (hereinafter Raab) U.S. Patent No. 5,751,967 in view of Kurt G. Schumacher., (hereinafter Schumacher) U.S. Patent No. 6,735,765
19. As to claim 10, Raab discloses the invention substantially as claimed. Raab teaches a method, comprising: separating logically a storage device operable to provide storage resources for storing (fig.2, 207, storage device) user data over the local area network to at least one network entity (see fig.2, 207 and col.6, lines 26-58) establish at least one group managing a configuration comprising a mapping (see col.6, lines 48, and col.8, lines 51-67) of plurality of virtual local area networks to the at least one group and mapping of the plurality of virtual volumes to the at least one group [see col.8, lines 12-18](*configuring VLANs within configuration-switched devices*); and routing information from a network entity associated with one of the plurality of virtual local area networks (see paragraph 10 of Raab VLANS) and preventing communication from a second network entity not associated with the plurality of virtual local area networks to upon base upon the configuration (see col.4, line 61 to col.5, line 19), Wherein the managing, routing and preventing is performed by the storage device (see col.10, lines 1-29). However, However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

20. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
21. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing.
22. As to claim 11, Raab teaches the invention as claimed, further comprising at least one of: configuring network parameters; configuring a new file system; configuring a designated file system; and deleting a designated file system (see col.6, lines 45-59, and col.7, lines 51-67).

23. As to claim 12, Raab teaches the invention as claimed, further comprising at least one of: updating a management interface IP address; updating a physical network interface IP address; updating a VLAN interface IP address and a VLAN tag; deleting a designated VLAN interface; and adding a new VLAN interface (see col.2, line 55 to col.3, line 5).
24. As to claim 13, Raab teaches the invention as claimed, further comprising at least one of: adding a VLAN to a file system; removing a VLAN from the file system; adding a volume to the file system; and removing a volume from the file system (see col.6, lines 45-59, and col.7, lines 51-67).
25. As to claim 14, Raab does not explicitly teach authenticating user authority (see col.2, line 25 to col.3, line 5).
26. As to claim 15, Raab discloses the invention substantially as claimed. Raab teaches a computer program product, comprising: code for sending and receiving tagged frames to and from a network interface (see col.5, lines 1-19, and col.6, line 59 to col.7, line 20); code for managing a file system and providing storage resources (fig.2, 207, storage device) for storing user data over a network to at least one network entity (see fig.2, 207 and col.6, lines 26-58, col.7, lines 1-59 and col.8, lines 20-50), code for managing a configuration comprising a mapping of the virtual volume to a virtual local area network segment [see col.5, line 60 to col.6, line 10 and col.11, line 59 to

col.12, line 60]; and code for routing information from the virtual local area network segment, and a computer readable storage medium for holding the codes, wherein the managing of the configuration, routing and preventing are performed by a storage device hosting the file system (see col.3, line 56 to col.4, line38, and col.4, line 61 to col.5, line 20). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

27. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
28. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration

information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing

29. As to claim 16, Raab discloses the invention substantially as claimed. Raab teaches further comprising at least one of: code for receiving configuration information for the file system; code for receiving configuration information for the virtual local area network (see col.3, line 56 to col.4, line 38). But Raab does not explicitly teach receiving configuration information for the virtual volume. However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.
30. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].

31. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing.
32. As to claim 17, Raab teaches the invention as claimed, further comprising at least one of: code for updating configuration information for the file system; code for updating configuration information for the virtual volume; and code for updating configuration information for the virtual local area network (see col.7, lines 1-35, and col.8, lines 20-50).
33. As to claim 18, Raab discloses the invention substantially as claimed, Raab teaches a network storage apparatus, comprising: a means for processing information (Fig.2, 202); a means for connecting to a virtual local area network (VLAN) switch (Fig.4, Vlan devices 410) (see col.1, lines 15-45, and col.5, lines 60-67); wherein the means for processing and the means for connecting to a virtual local area network (VLAN) switch are connectable to a storage device operable to provide storage resources for

storing (fig.2, 207, storage device) user data provided over a network to at least one network entity (see fig.2, 207, and col.6, lines 26-48) having at least one virtual volume mapped one segment of a virtual local area network (VLAN) based upon configuration information managed by the processing means,(see col.5, line 44 to col.6, lines 58, col.7, line 10 to col.8, line 67). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

34. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
35. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration

information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing.

36. As to claim 19, Raab disclose the invention substantially as claimed, Raab teaches a storage apparatus, comprising: a means for processing information (Fig.2, 202); a means for storing data accessible over a network by at least one network entity (Fig.2, 207) (see col.6, lines 26-58); a means for connecting to a virtual local area network (VLAN) switch (Fig.4 Vlan device 410) (see col.1, lines 15-45, and col.5, lines 60-67); wherein the means for processing, the means for connecting to a virtual local area network (VLAN) switch map one segment of a virtual local area network (VLAN) for storage data based upon configuration information (see col.5, line 20 to col.6, line 48, col.8, lines 53-67, col.15, line 58 to col.17, line 10). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.
37. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a

storage controller comprise a first virtual volume and a second virtual volume....

wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].

38. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information form one location in memory and placing the extracted information thereby enable data sharing.

39. As to claim 20, Raab discloses the invention substantially as claimed, Raab teaches the system, comprising: a storage device operable to provide storage resources for storing (fig.2, 207, storage device) user data over a network to at least one network entity;(Fig.2, 207) (see col.6, lines 26-58); a virtual local area network (VLAN) switch, coupled to the storage device (Fig.4, Vlan devices 410) (see col.1, lines 15-45, and col.5, lines 60-67); and at least one segment coupled to the virtual local area network (VLAN) switch via at least one virtual local area network (Fig.4 VLAN devices); wherein the storage device is operable map the at least one segment of the at least one virtual local area network, and at least one virtual volume or the storage

device based upon configuration information (see col.5, line 20 to col.6, line 48, col.8, lines 53-67, col.15, line 58 to col.17, line 10). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

40. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
41. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database

information from one location in memory and placing the extracted information thereby enable data sharing.

42. As to claim 21, Raab discloses the invention substantially as claimed, Raab teaches the method of controlling accesses from servers to a network storage subsystem, wherein the network storage subsystem is connected to a virtual local area network (VLAN) switch via a VLAN switch and receives access requests from the servers via the VLAN switch, the method comprising the steps of: allocating a dedicated storage resource for storing user data provided over a network to at least one network entity (see fig.2, 207) to each VLAN segment (see col.15, line 45 to col.16, line 65), receiving a Internet Protocol (IP) packet based access from a server (see col.17, lines 10-32, and col.19, lines 10-15), determining a VLAN segment that the server belongs to, based on a VLAN identification in the IP packet (See col. 15, line 45 to col.16, line 65, col.17, lines 10-32, and col.19, lines 10-15), and permitting the server to access the dedicated storage resource allocated to the VLAN segment that the server belongs to, and preventing another server that does not belong to the VLAN segment from accessing the dedicated storage resource based on configuration information managed by the network storage subsystem, wherein the determining, permitting and preventing are performed by the network storage subsystem (see col.15, line 45 to col.16, line 65). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

43. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
44. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information form one location in memory and placing the extracted information thereby enable data sharing.
45. As to claim 22, Raab discloses the invention substantially as claimed, Raab teaches the method, comprising: separating a virtual LAN into a plurality of segments (see col.15, line 45 to col.16, line 65); managing a mapping of each one of the plurality of segments to a storage device accessible over a network by at least one network entity

(see fig.2, 207 and col.6, lines 10-48 and col.8, lines 52-67); assigning to each one of the plurality of segments, and controlling access to a virtual volume such that the virtual volume will communicate only with a segment to which it is assigned; wherein the managing and controlling is performed by the storage device operable to provide storage resources for storing (fig.2, 207, storage device) user data (see col.15, line 45 to col.16, line 65). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

46. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
47. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface

control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing.

48. As to claims 23-30, Raab discloses the invention as claimed, wherein the group comprises a file system (see col. 8, lines 36-50).

Response to Arguments

49. Applicant's arguments filed on May 22, 2007 have been fully considered, however they are not persuasive because of the following reasons:

50. Applicants argue that Bhatia does not teach or suggest including at least one group; mapping of a plurality of segments of a virtual local area network (VLAN) connectable by the network interface to the at least one group; mapping of a second plurality of virtual volumes of the at least one storage device to the at least one group; and a specific network entity associated with one of the plurality of segments is being allowed to access the second plurality of virtual volumes within the same group. In response to Applicant's argument, the Patent Examiner maintains the rejection because the combination teach configuration information including information on at least one group, information on mapping of a plurality of segments (VLANs) of a virtual local area network (VLAN) [see col.8, lines 12-18](*configuring VLANs within configuration-switched devices*) connectable by the network interface to the at least one group and information on mapping of the plurality of a plurality of storage

devices to the at least one group [see col. 6, lines 6-10] (groups into VLANs (segments)); and wherein the processor, the memory, the storage controller and the network interface are operable to control the virtual local area network (VLAN) switch to map the plurality of segments to the at least one group and the at least one group, and based upon the configuration information; and such that a specific network entity associated with a specific segment of the virtual local area network VLAN associated with at least one of the plurality of segments to access the within the at least one group. (see col.5, line 20 to col.6, line 48, col.8, lines 53-67, col.15, line 58 to col.17, line 10). However, Raab does not explicitly teach a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volumes and wherein at least one of the processor or the network interface control access to the at least one of plurality of virtual volumes.

51. In the same field of endeavor, Schumacher discloses (e.g., Sharing data between operating systems). Schumacher discloses a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information (Schumacher teaches a storage controller comprise a first virtual volume and a second virtual volume.... wherein the first data processing system configure the storage controller such that the storage controller), [see col.5, line 30 to col.6, line 67 and col.9, lines 15-28].
52. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Schumacher's teaching of a

- sharing data between operating system with the teaching of Raab, to have a storage controller, coupled with the at least one storage device, and at least one of a plurality of virtual volume and wherein at least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information because it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing. Also, Raab and Schumacher do not explicitly disclose a specific network entity is allowed to access only a specific virtual volume.
53. In the same field of endeavor, Pothapragada discloses (e.g., intelligent virtual volume access). Pothapragada discloses a specific network entity is allowed to access only a specific virtual volume (see fig.1 of Pothapragada and col. 6, line 64 to col.7, line 55, and col.8, lines 35-51) (*In response to a request for local storage space, the create function check whether a local volume can satisfy the request*).
54. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time invention was made to have incorporated Pothapragada's teaching of an intelligent virtual volume access with the teaching of Raab, to have a specific network entity is allowed to access only a specific virtual volume for the purpose of increasing storage performance and/or capacity to meet new demands (see Pothapragara col.1, lines 55-57).
55. Therefore, the Examiner asserts that cited prior arts teach or suggest the subject matter broadly recited in independent claims 1, 10, 15, and 18-22. Claims 2-9, 11-17

and 23-30 are also rejected at least by the virtue of their dependency on independent claims and by other reasons set forth in the previous office action.

56. Accordingly, claims 1-30 are respectfully rejected.

Conclusion

57. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

58. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammy T. Nguyen whose telephone number is 571-272-3929. The examiner can normally be reached on Monday - Friday 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ***William Vaughn*** can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

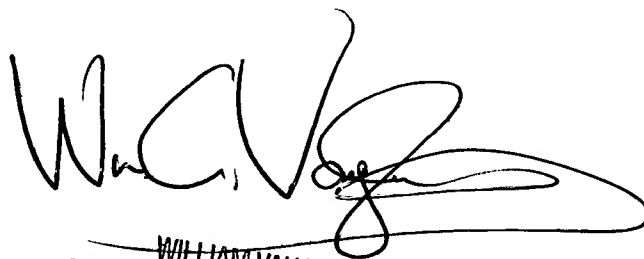
Information regarding the status of an application may be obtained from the Patent

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DN

July 26, 2007



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